FUNCTIONAL DIRECTORY

Directorate of Science & Technology

June 1971

R-1

Office of Computer Services

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OFFICE OF COMPUTER SERVICES
FUNCTIONAL DIRECTORY

This directory describes the various functions of OCS and provides a subject directory with the most knowledgeable contacts for information concerning these subjects.

OFFICE OF COMPUTER SERVICES (OCS)

	Room	Black	Red

Director

Deputy Director

Executive Officer

Special Assistant for
    Policy and Plans

Special Assistant

Special Assistant

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To satisfy the demands for computer support from various Agency components, new computer equipment is procured, installed, and operated by OCS. Systems analysts, programmers, and operators (many of them trained by our own Training Staff) develop software, programs, and procedures, and operate equipment to serve a wide variety of needs.

The OCS organization chart is shown in Figure 1. The Office of the Director administers the operations and activities of the entire OCS effort to meet the computer requirements of Agency components. The Director establishes policy related to ADP (Automatic Data Processing) matters within the Office. In addition, the Director is a member of the Agency's Information Processing Board.
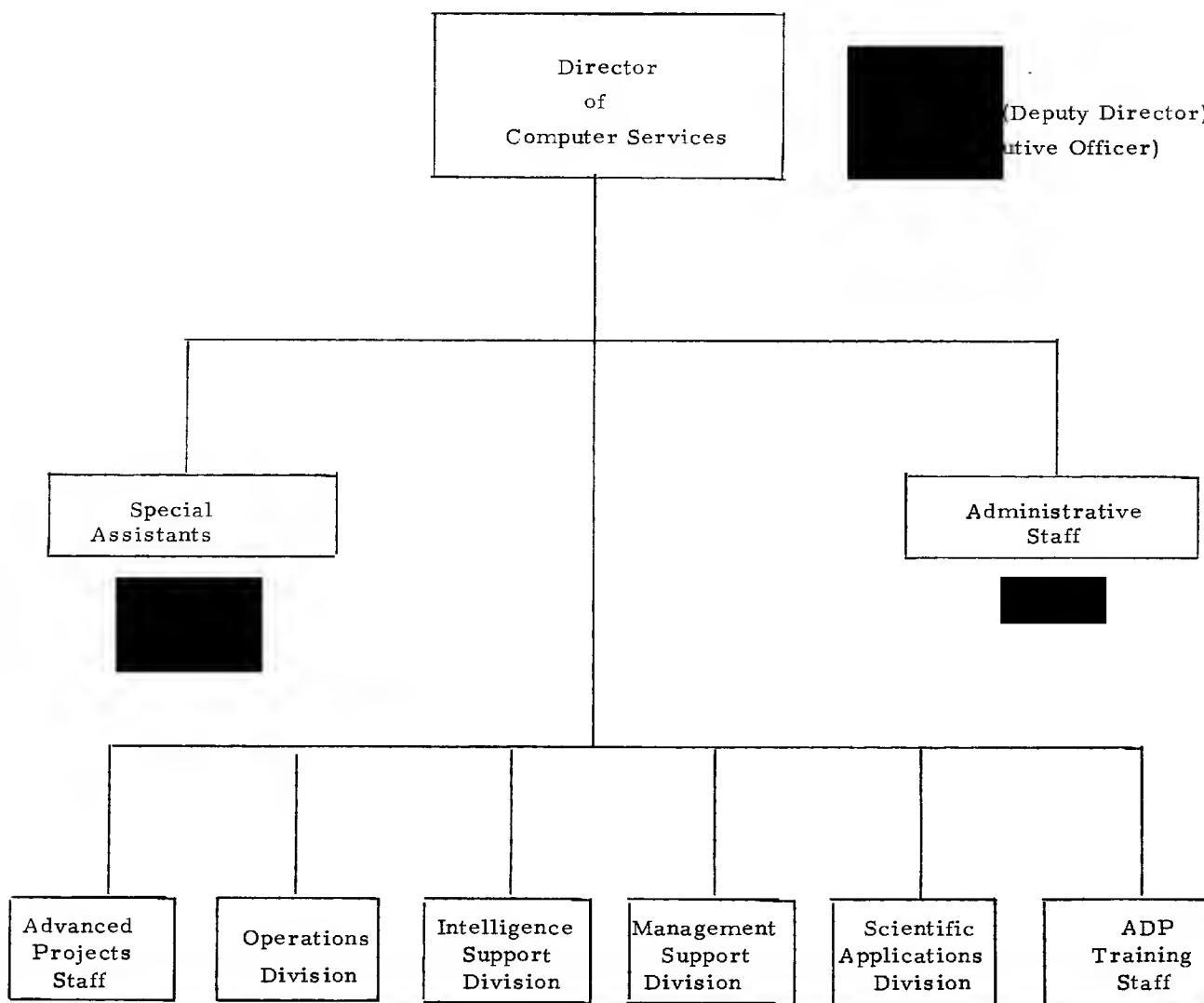
A number of functions which require broad coordination are performed or reviewed at the Office level. These include:

--Planning and programming for personnel, financial, space and equipment resources.

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                    │      Director        │          ███████████████  (Deputy Director)
                    │        of            │          ███████████████  ...utive Officer)
                    │  Computer Services   │          ███████████████
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    │  Assistants   │         │                          │      Staff       │
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      ███████████             │
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      │ Advanced ││          ││Intelligence││Management││Scientific││   ADP    │
      │ Projects ││Operations││ Support  ││ Support  ││Applications││ Training │
      │  Staff   ││ Division ││ Division ││ Division ││ Division ││  Staff   │
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Figure 1. Office of Computer Services

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--Reviewing proposals and requests for OCS computer support
from various Agency components.

--Reviewing plans for OCS computer systems, services, and
software.

--Developing career programs for office personnel.

--Participation in ADP programs that emanate from the Office of
Management and Budget, the General Services Administration,
and the Bureau of Standards.

--Briefings and other public relations-like activities.

Serving within the Office are three staffs: Advanced Projects
Staff, ADP Training Staff, and the Administrative Staff. The activities
of each of these staffs are discussed below.

ADVANCED PROJECTS STAFF (APS)

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Chief, Advanced
Projects Staff

APS serves the Office of Computer Services and other Agency
components by developing new computer techniques that are of potential
use to many people. The staff works on services of general interest, as
opposed to the applications divisions, which address specific needs of
their customers. In essence, the activities of APS represent OCS'
investment in the future. The following represents some of the activities
of the staff:

--Develop computer time-sharing systems. Such systems allow
many people simultaneously to make use of one computer
for each individual's particular application.

--Develop man machine languages. Special languages used at
remote terminals are devised by the Staff. These languages
must be easily learned and used by the many kinds of people
who need computer support.

--Evaluate computer systems. APS reviews prospective computer
systems, particularly new and unusual types, after which
systems are evaluated and appropriate recommendations made.

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--Develop computer security methods. The Staff develops and
evaluates hardware and software techniques to improve system
security and data privacy.

ADP TRAINING STAFF (ATS)

Chief, ADP
  Training Staff   25X1A

The ADP Training Staff is responsible for designing and conducting
a computer science training program as an Agency-wide service. The
training staff offers a wide range of courses in computer systems funda-
mentals and programming. These include introduction to Computer
Programming, ADEPT, ADP Orientation, Systems Analysis, PL/1
(Programming Language 1), Operating System 360, PL/1 Macro Writing,
COBOL Programming Techniques, and others as the need is determined.

The ADP Training Staff administers the OCS technical book collec-
tion. It is also responsible for distributing publications of general
interest produced within OCS. Examples include:

--Systems manuals, for users of OCS batch and interactive
computer systems. These manuals cover user languages,
system structure, and procedures for using the system
described.

--Policy and Procedure Handbook, which describes policies and
procedures concerned with the use of OCS equipment and people
resources.

--Program manuals, which provide user information on a specific
program such as BATCHMON or SHERLOCK.

ADMINISTRATIVE STAFF

Chief, Administrative
  Staff   25X1A

Deputy Chief and
  Personnel Officer

Security Officer

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ADMINISTRATIVE STAFF (cont.)

Budget and Finance

Logistics and Services

Personnel Assistant

Registry

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This staff is the administrative arm of the Director and provides
assistance to all other components in OCS in matters of security,
logistics, finance, training, personnel, and administration. In charge
of each of these areas is a specialist who, in addition to performing
his regular duties, is available to advise, counsel, and offer guidance
to OCS personnel. The following are examples of assistance these
specialists can provide:

--Arranging for internal and external training.

--Security indoctrination.

--Advice on security-related problems.

--Interpretation of Agency regulations and procedures.

--Procurement of supplies and equipment.

--Assistance in contract administration.

--Development of budgetary details in support of OCS requirements.

--Assistance in travel matters.

--Mail service.

--Personnel guidance and counseling.

THE DIVISIONS OF OCS

There are four OCS divisions: three "applications" divisions,

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organized around the kinds of computer applications we have, and one division which operates the Computer Center. The three applications divisions are the Management Support Division, Intelligence Support Division, and the Scientific Applications Division. These divisions work with the user to determine his ADP needs. They design and build systems, and develop or modify and test the necessary computer programs. Continuing communication between application divisions and customers is encouraged so that any necessary system changes can be made to improve the product.

The Operations Division handles the production aspects of a job; e.g., scheduling the work, preparing jobs for processing, and operation of the computer center equipment. This division also maintains utility and control programs and initiates plans for acquiring new computer equipment.

OPERATIONS DIVISION (Figure 2)

Chief, Operations Division

Deputy Chief

Chief, Computer Processing
    Branch

Chief, Support & Services
    Branch

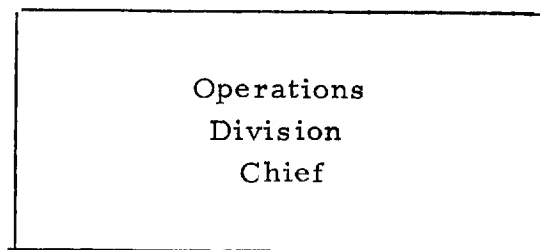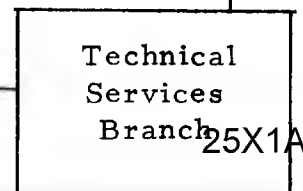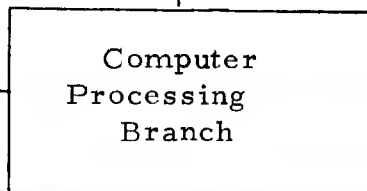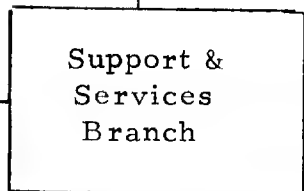Acting Chief, Technical
    Services Branch

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The computer center is open 24 hours a day, 7 days a week, processing 500 to 700 computer jobs per day. The job of operating and scheduling the many computers and peripheral equipment and the maintenance of a tape library of over 12,000 reels of magnetic tapes and 200 large disk packs is handled by the Computer Processing Branch. CPB handles the input and output for customers of the computer center. Customers are encouraged to present day-to-day procedural or processing requirements to the Chief, CPB.

Data preparation is handled by the Support and Services Branch.

CIA INTERNAL USE ONLY

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                    ┌─────────────────┐
                    │   Operations    │              ████████ (Deputy Chief)    25X1A
                    │    Division     │
                    │     Chief       │
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│  Support &  │      │  Computer   │      │  Technical  │
│  Services   │      │ Processing  │      │  Services   │   25X1A
│   Branch    │      │   Branch    │      │   Branch    │
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CIA INTERNAL USE ONLY

Input data for computer processing is prepared using keypunch machines, card sorters, collators, interpreters, and printers. This branch also is responsible for technical writing, i.e., technical publications for the computer center customers. An important example here is TECH NOTES, a one page news bulletin containing items of interest to computer center users. Other miscellaneous functions for the Operations Division such as budget, statistical accounting, and contract monitoring are included in responsibilities of this branch.

A key responsibility of the Technical Services Branch is the resolution of software problems of computer center customers. This function is performed by the Customer Service Section, which is also responsible for maintenance of production applications systems, maintenance of user entries in the procedure library and the system catalog, and scheduling of processing for production applications. Agency systems analysts and programmers are encouraged to surface software problems (including operating system, JCL, and design techniques) with CSS. Agency system designers and programmers turn over completed systems to CSS for maintenance and production scheduling and monitoring.

Another responsibility of the Technical Services Branch is systems "software", a word coined to describe a special set of computer programs, which activate and control the hardware and also function as a link between the hardware and the applications programs. The primary purpose of systems software is to effect an optimization of hardware utilization and service to the user and his applications program. As hardware has become more sophisticated with special sensory, interrupt, and decision features, the systems software has become correspondingly more complex. Developing and modifying systems software is done by systems programmers who comprise the Interactive Services Section and the Systems Section. ISS is responsible for the IBM 360/67 and its CP/CMS software which services several hundred persons via 80 terminals. SS is responsible for the software for all other systems.

The Hardware Services Section is responsible for hardware evaluation, selection, planning, configuration, installation, and utilization monitoring.

MANAGEMENT SUPPORT DIVISION(Figure 3)   25X1A

Chief, Management
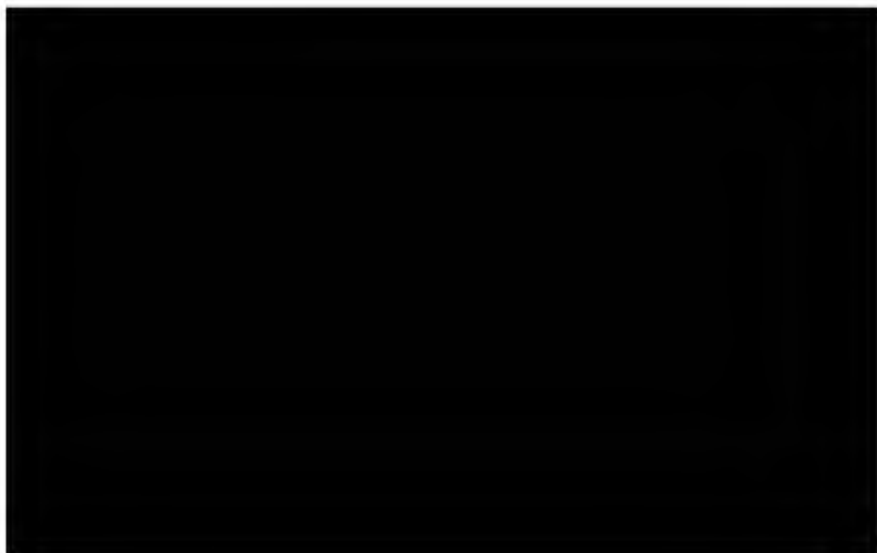 Support Division

Deputy Chief

Chief, Manpower and
  Personnel Branch

Chief, Budget and Fiscal
  Branch

Chief, Material Branch

Chief, Development
  Branch

Broadly speaking, MSD helps the Support Directorate and the Office of Planning, Programming and Budgeting by using computer systems to account for people, money, and things. Numerous computer reports are produced regularly to support the activities of the Support Directorate and OPPB.

MSD is also engaged in a very large scale project (Support Information Processing System -- SIPS) which involves the study, redesign, evaluation, and programming for most of the present Support Directorate data processing activities. SIPS will extend information processing into areas not previously serviced. The SIPS Task Force, consisting of the entire Management Support Division and about 35 officers from the Support Directorate, reports to the Chief, MSD, as Task Force Director.

PEOPLE

Some of the information that is processed and maintained in support of the management of the Agency's personnel resources are: employees' qualifications or skills file; retirement statistics including projections and actuarial studies; tables of organization including salary controls and position-
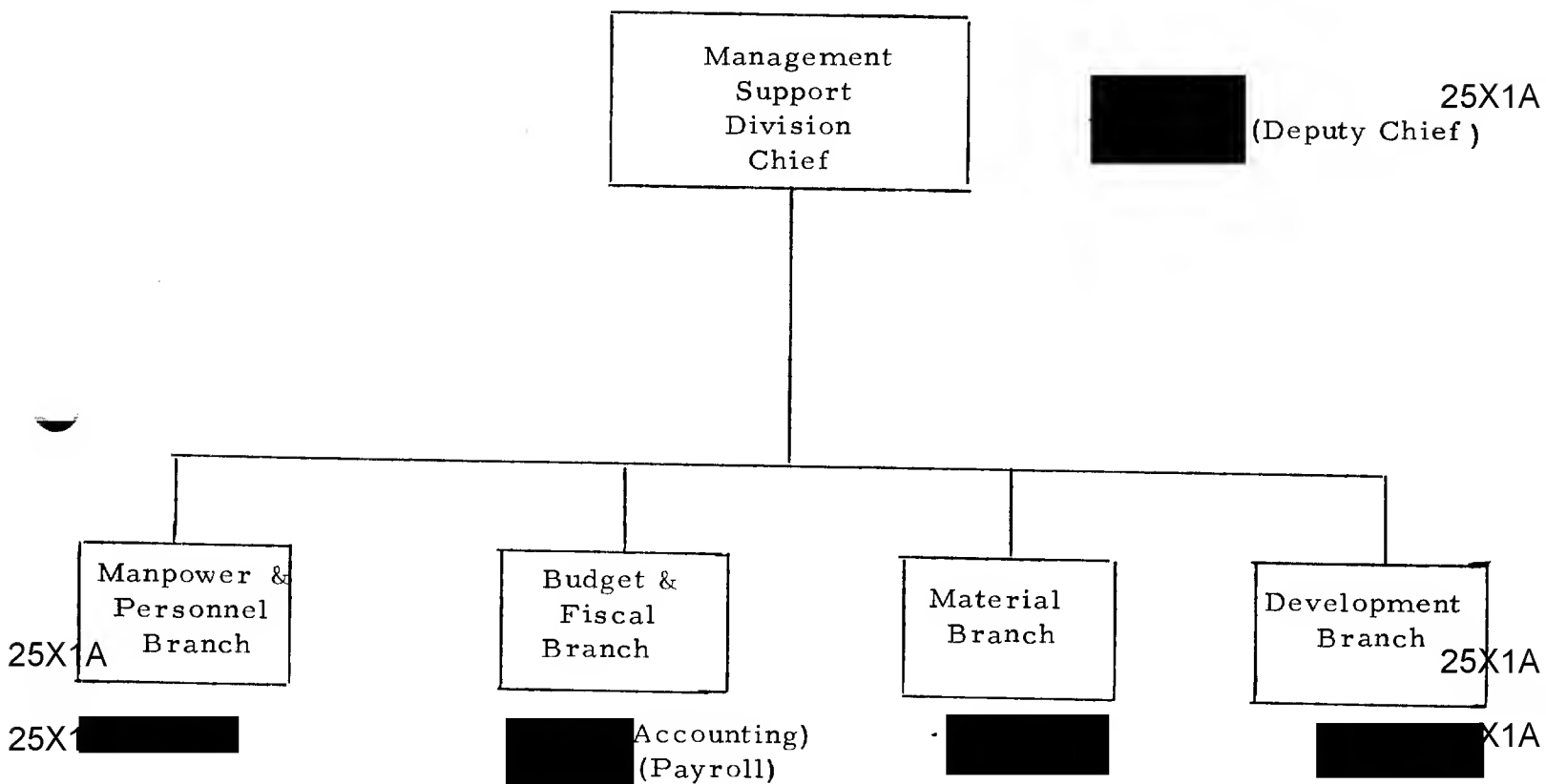
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                    ┌───────────────────┐
                    │    Management     │            ┌──────────┐   25X1A
                    │     Support       │            │██████████│ (Deputy Chief)
                    │     Division      │            │██████████│
                    │      Chief        │            └──────────┘
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 │  Manpower &   │   │   Budget &    │   │   Material    │   │  Development  │
 │   Personnel   │   │    Fiscal     │   │    Branch     │   │    Branch     │
 │    Branch     │   │    Branch     │   │               │   │               │
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                          (Payroll)
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Figure 3. Management Support Division

to-employee comparisons; emoloyee benefits, such as credit union, hospitalization, and insurance accounting and reporting; employee locator information; employee training records including histories of external and internal training, course scheduling, and related statistics; security name check file searching and maintenance; status of the security processing of applicants for employment and status of special clearances.

MONEY

MSD, with direction from the Office of Finance and Office of Planning, Programming, and Budgeting, produces various reports which are concerned with planning and controlling financial resources. These reports include status of funds, accounting data, general and subsidiary ledgers, expenditures, obligations, payroll data, leave records, retirement records, salary checks, tax records --- in short, just about all reports involving money.

THINGS

In supporting the management of things (property, supplies, etc.), MSD is involved with stock status and inventory; statistics on trends, projections and history to aid in stock management and similar statistics designed to aid contract management. In addition they assist in providing current catalog information including records of manufacturers stock numbers referenced to federal stock numbers. Computer assistance is also provided in the production of machine language tapes to drive printing equipment which produces the Agency Supply Catalogs, for example. This same procedure is employed in printing several other Agency publications including the DDI-produced encyclopedia, The National Intelligence Survey (NIS).

SIPS

The Support Information Processing System entails revising, redesigning and extending the activities of ongoing projects in support of the management of people, money, and things.

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The SIPS project was started in late 1964 by DDS with some help from OCS which has increased to the present DDS-OCS joint effort. The objectives of this system will be to provide common file structures and data; integrate reporting procedures; make use of advanced computer technology and provide up-to-date managerial tools; automate appropriate support activities not now being served by computers; reduce clerical processing techniques; and standardize data acquisition, data preparation, data flow procedures, and data management in support activities.

INTELLIGENCE SUPPORT DIVISION (Figure 4)

Chief, Intelligence
   Support Division

Deputy Chief

Chief, Data Applications
   Branch

Chief, Special Projects
   Branch

Chief, Intelligence
   Management Branch

Chief, Programming
   Services Branch

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The Intelligence Support Division develops and maintains EDP systems in response to requests from intelligence production and evaluation components (in the DDI, DDS&T and NIPE Staff). After analyzing problems in data processing terms, ISD designs files, procedures, and computer programs to operate as a system; writes and tests the programs; and coordinates the development of the system. The Scientific Applications Division, in part, is in the same business, but the problems on which they work are those which require special expertise in mathematics and the physical sciences. Sometimes the problems are such that both divisions are involved and the efforts are coordinated.

A good example of ISD activity is the development and continued expansion of a system to record and display data on missile and space events for the Foreign Missile and Space Analysis Center (FMSAC) of the DDS&T.
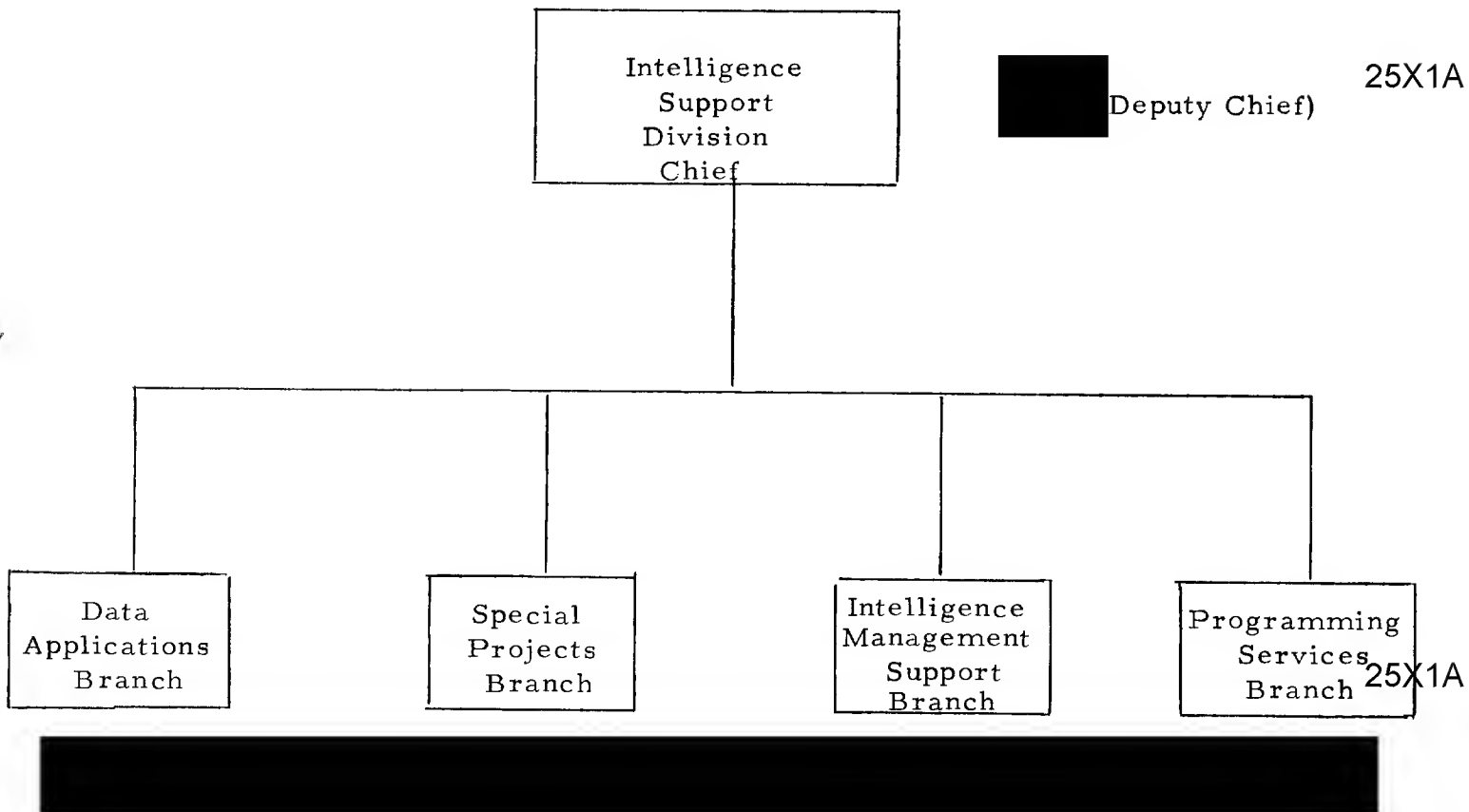
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Figure 4. Intelligence Support Division

In the main, this is data that describes when and where the event occurred, the type of vehicle, the purpose, and similar descriptive information.

Another example is a project to manage information on previous, current, and future Soviet military costs. This project of the Office of Strategic Research, known as SCAM (for Strategic Costs Analysis Model), manipulates data on military force levels and associated costs to develop total costs of the Soviet military establishment (given various force structures). One of the obvious advantages of the computer assistance is the ability to develop fairly easily the cost implications of different esti-mated force structures. It has also enhanced OSR's ability to include in the whole process mathematical techniques for cost-estimating and time-phasing of large expenditures.

QUIKTRAK is a large scale on-line system which was designed to support OSR analysis of data concerning Communist military forces and their installations. Machine assistance in the orderly processing of this information was considered essential by OSR because of the size of the data base (some six million items of information). QUIKTRAK programs have the capability to manipulate military forces data and to display such data geographically on background maps, thereby placing all available significant information on Communist forces under the direct control of the intelligence analyst in an accessible and usable form.

Many intelligence applications involve similar functions: The analyst must be able to maintain files, to make changes for corrections and new information, and retrieve data from the files. Thus, from the standpoint of the functions performed, many intelligence systems look alike; only the content of the files differs. ISD is involved in the development of "file management systems" which can perform these tasks essentially independent of the content of the data.

SCIENTIFIC APPLICATIONS DIVISION (Figure 5)

Chief, Scientific
  Applications Division

Deputy Chief

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Other areas of work with which the Branch is concerned include: predicting the performance of high frequency radio communications links; analysis of electromagnetic waves propagated through the atmosphere; analysis of antenna design, gain pattern, and signal characteristics; computer support to automated collection systems; maintenance and modifications of the digitizer hardware system; and enhancement of digitized imagery.

The Mathematics Branch is concerned with five areas: cartography and plotting, mathematical modeling and simulation, a series of projects for the DDP, statistical analysis of medical data, and mathematical analysis.

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